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WATER SUPPLY OUTLOOK FOR ARIZONA



U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

SALT RIVER VALLEY WATER USERS ASSOCIATION

and

ARIZONA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

AS OF
APR. 1, 1974

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

*Cover Photo: Snow Surveyors near Ship Creek,
Alaska snow course.*

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 511 N. W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	204 E. 5th. Ave., Room 217, Anchorage, Alaska 99501
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR ARIZONA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

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ARIZONA WATER SUPPLY OUTLOOK

APRIL 1, 1974

Spring runoff will be much below normal this year. With above average water supplies in storage, however, shortages will be confined to areas depending upon direct diversions.

SNOW COVER

Above normal temperatures the last half of March have reduced the snowpack to zero at many snow courses. At elevations below 9,000 feet virtually all the snow has melted except for a few patches in protected areas. Snow cover now varies from one-fourth of average on the Gila Watershed to one-half of average on the Verde and Little Colorado. At the higher elevations in the White Mountains moderate snowfall occurred since March 15, raising the high elevation snow to near normal. Mt. Ord's present 75-inch depth at 11,000 feet is just half of that measured a year ago.

PRECIPITATION

Watershed precipitation improved somewhat during March, but amounts were still generally below average. Since November 1, total precipitation varies from 70% of average on the Gila to 90% on the Salt. The extremely dry period prior to November 1, however, is still affecting streamflow.

SOIL MOISTURE

Soils are very wet between 7,000 and 10,000 feet, but are fairly dry at the lower elevations and are very dry under the unmelted snow above 10,000 feet.

RESERVOIR STORAGE

All major reservoir systems still contain above average amounts of water. No significant increase in storage is expected this year, as use will exceed inflow.

Stock tanks and small irrigation reservoirs contain below average amounts in most areas.

STREAMFLOW AND WATER SUPPLY

Although streamflow picked up slightly on the Salt and Verde Rivers during March, the yield was less than half of normal. A large portion of the snow-melt was absorbed by the dry soil. Flow in the Gila River declined during March and is expected to continue to decline in April.

April thru May streamflow forecasts range from 18% of average on the Gila to 40% of average on the Salt and Verde.

Water supplies will be adequate in all the major irrigated areas served by large storage reservoirs, but shortages will occur along the upper Gila where considerable pumping will be required.

THIS IS THE FINAL REPORT OF THE 1974 SEASON.

ABOUT APRIL 1,
1974

STREAMFLOW FORECASTS

STREAMFLOW FORECASTS		1974		THIS YEAR		PAST RECORD	
BASIN, STREAM and or FORECAST POINT		FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET		
		Thousand Acre Feet	Percent of Average		Last Year	Average †	
<u>SALT RIVER DRAINAGE</u>							
Salt near Roosevelt		34	34	April	340.9	99.3	
"		51	36	Apr-May	703.1	142.6	
Tonto Creek near Roosevelt		2	29	April	42.2	7.0	
"		3	36	Apr-May	56.4	8.4	
Verde River above Horseshoe		12	27	April	342.5	43.9	
"		22	41	Apr-May	424.2	54.0	
Total Salt River Project		48	32	April	725.6	150.2	
"		76	37	Apr-May	1183.7	205.0	
<u>GILA RIVER DRAINAGE</u>							
Gila River at Bylas		2	9	Apr-May	257.8	23.5	
Gila River near Gila		7	35	Apr-May	97.4	20.0	
Gila River near Solomon		8	18	Apr-May	298.2	44.3	
"		5	16	April	172.8	31.8	
Gila River near Virden		4	18	Apr-May	123.4	22.8	
Frisco River at Clifton		5	21	Apr-May	179.7	23.6	
Frisco River at Glenwood		2	19	Apr-May	96.7	10.7	
<u>LITTLE COLORADO RIVER DRAINAGE</u>							
Little Colo. River above Lyman Dam		0.9	12	Apr-June	47.0	7.8	
<u>GRANITE CREEK DRAINAGE</u>							
Granite Creek		0.3	--	Apr-May	---	---	
Willow Creek		0.1	--	Apr-May	---	---	
<u>MIMBRES RIVER DRAINAGE</u>							
Mimbres River near Mimbres		0.5	31	Apr-May	8.6	1.6	
<u>COLORADO RIVER DRAINAGE</u>							
Virgin River nr. Littlefield		18	42	Apr-June	208.3	43.2	
† Based on the 15-year period, 1958-72							

[†] Based on the 15-year period,
1958-72

+ 1958-1972 period.

1974

SPRING RUNOFF

Stream and Station	Measured <u>1/</u> Runoff Jan-March	Forecast Runoff April-May	Total-January thru May		
			1974	% of Average	Last Year
Salt River at Intake	66	51	117	36	1212
Verde River above Horseshoe	60	22	82	43	778
Tonto Creek above Roosevelt	16	3	19	40	229
Gila River near Virden	12	4	16	21	279
Gila River near Solomon	24	8	32	20	599
Gila River near Bylas	6	2	8	7	546
Frisco River at Clifton	12	5	17	22	304
Little Colorado (Jan-June)	1	1	2	17	52

1/ Provisional runoff provided by USGS

RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH

ABOUT APRIL 1, 1974

ABOUT APRIL 1, 1974

BASIN or STREAM	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average†
<u>GILA RIVER DRAINAGE</u>					
Agua Fria	Lake Pleasant	157.6	100.8	147.5	62.3
Granite	Watson Lake	4.7	1.7	4.7	---
Granite	Willow Creek	6.1	3.0	6.1	---
Gila	San Carlos	948.6	548.4	663.3	199.7
Salt (4)	Roosevelt, Apache, Canyon & Saguaro	1,755	1,413.8	1,667	1,145
Verde (2)	Bartlett & Horseshoe	317.7	92.0	276.6	158.2
Salt and Verde	6 Salt River Project Reservoirs	2,073	1,505.8	1,944	1,303
<u>COLORADO RIVER DRAINAGE</u>					
Colorado	Lake Havasu	619.4	565.8	574.3	555.4
Colorado	Lake Mohave	1,810	1,637.7	1,679	1,675
Colorado	Lake Mead	26,159	19,482.0	19,980	16,927
Colorado	Lake Powell	25,002	17,935.0	11,966	---
Little Colorado	Lyman	30.6	23.7	12.7	15.0
Little Colorado	Show Low Lake	5.1	1.1	5.1	2.4

† Based on 15-year period, 1958-72

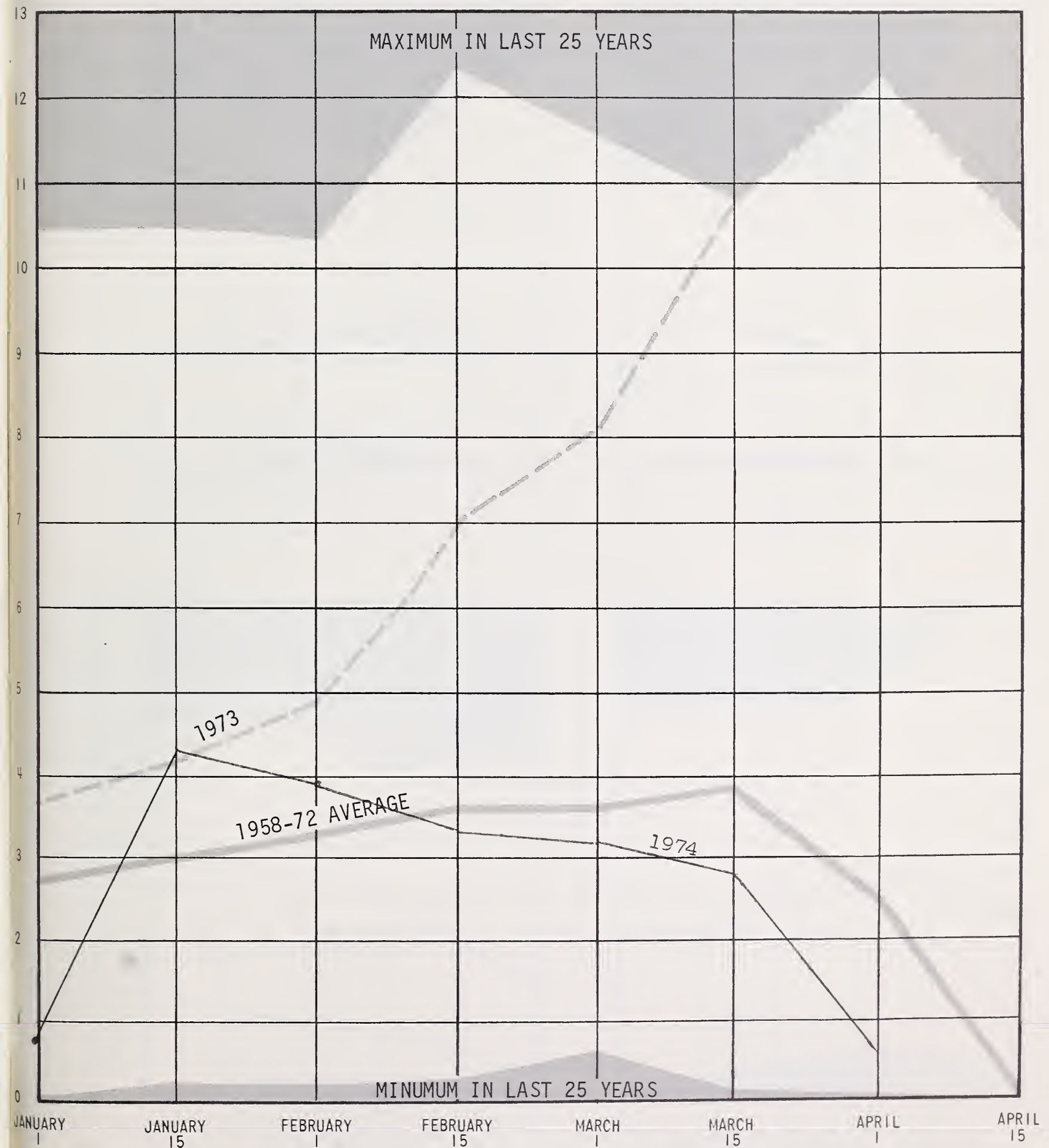
* Average is for less than 15 years of record

† Based on 15-year period, 1958-72

* Average is for less than 15 years of record



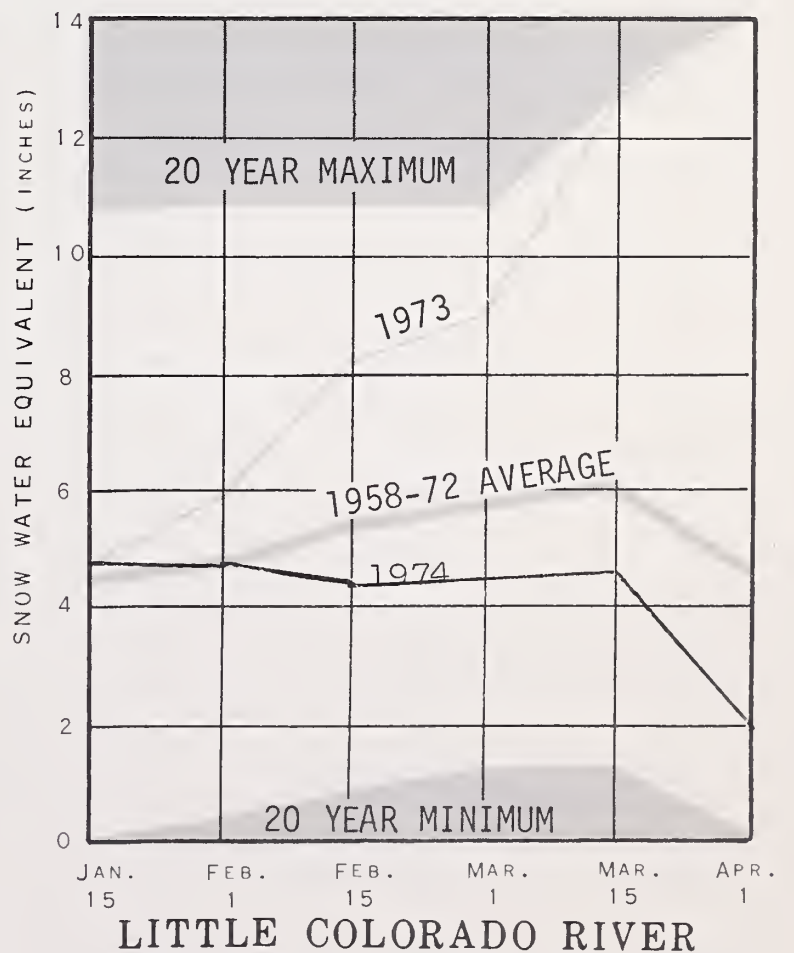
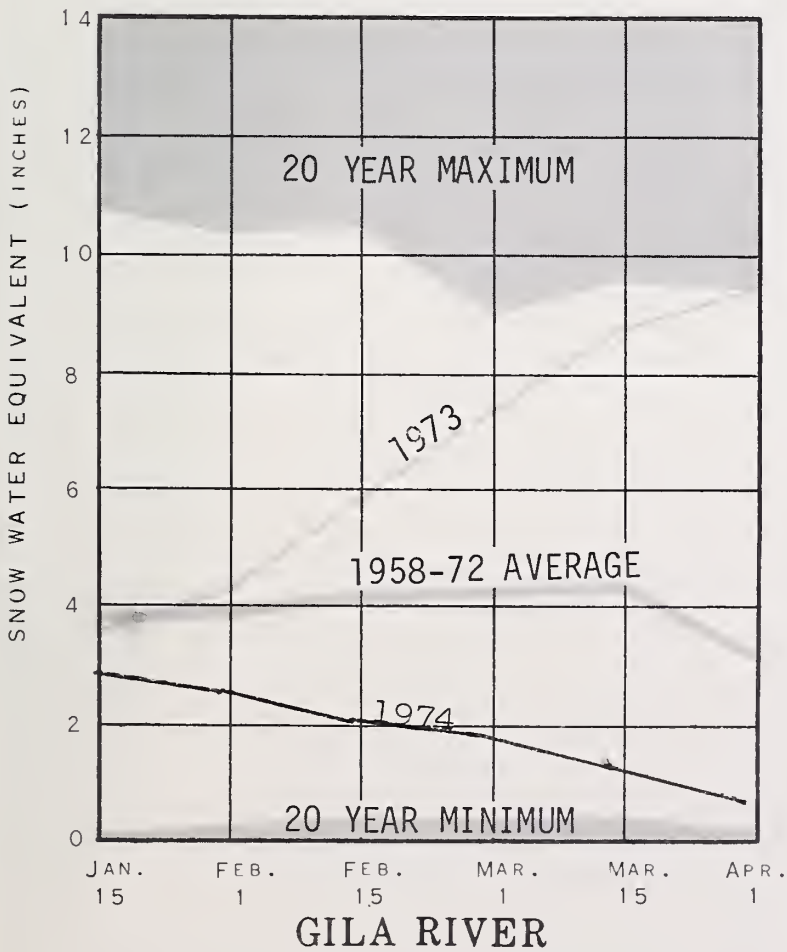
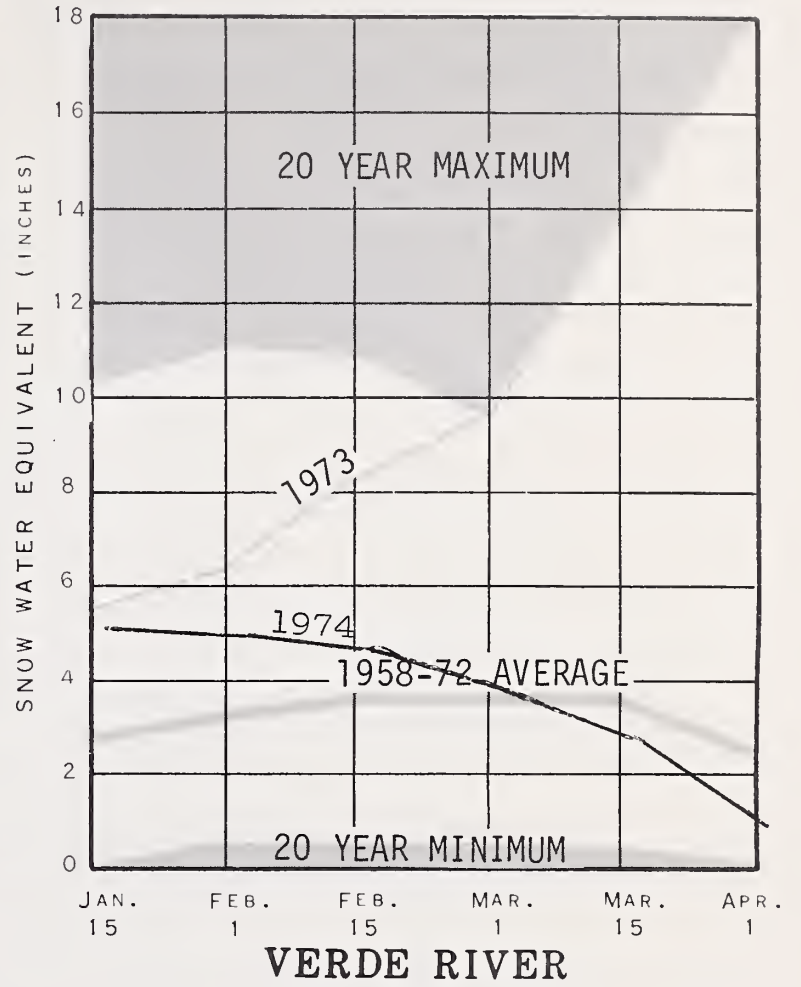
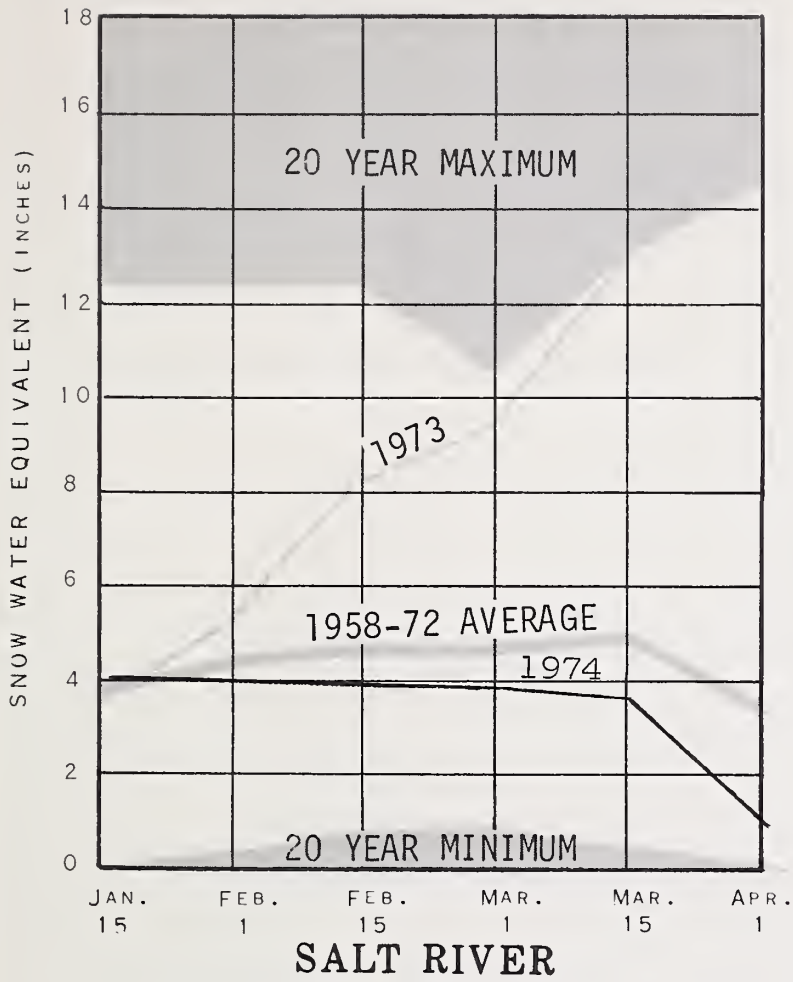
AVERAGE SNOW COVER ARIZONA 1974



This graph represents the average snow water content on eleven selected snow courses on Arizona Sub-Watersheds.



1974 WATERSHED SNOW COVER





SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

ABOUT APRIL 1, 1974

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF:	
		Last Year	Average
Gila	10	8	26
Salt	10	8	34
Verde	10	7	51
Little Colorado	5	18	55



WATER SUPPLY INVENTORY
SALT RIVER VALLEY SYSTEM

APRIL 1, 1974

IN ACRE-FEET

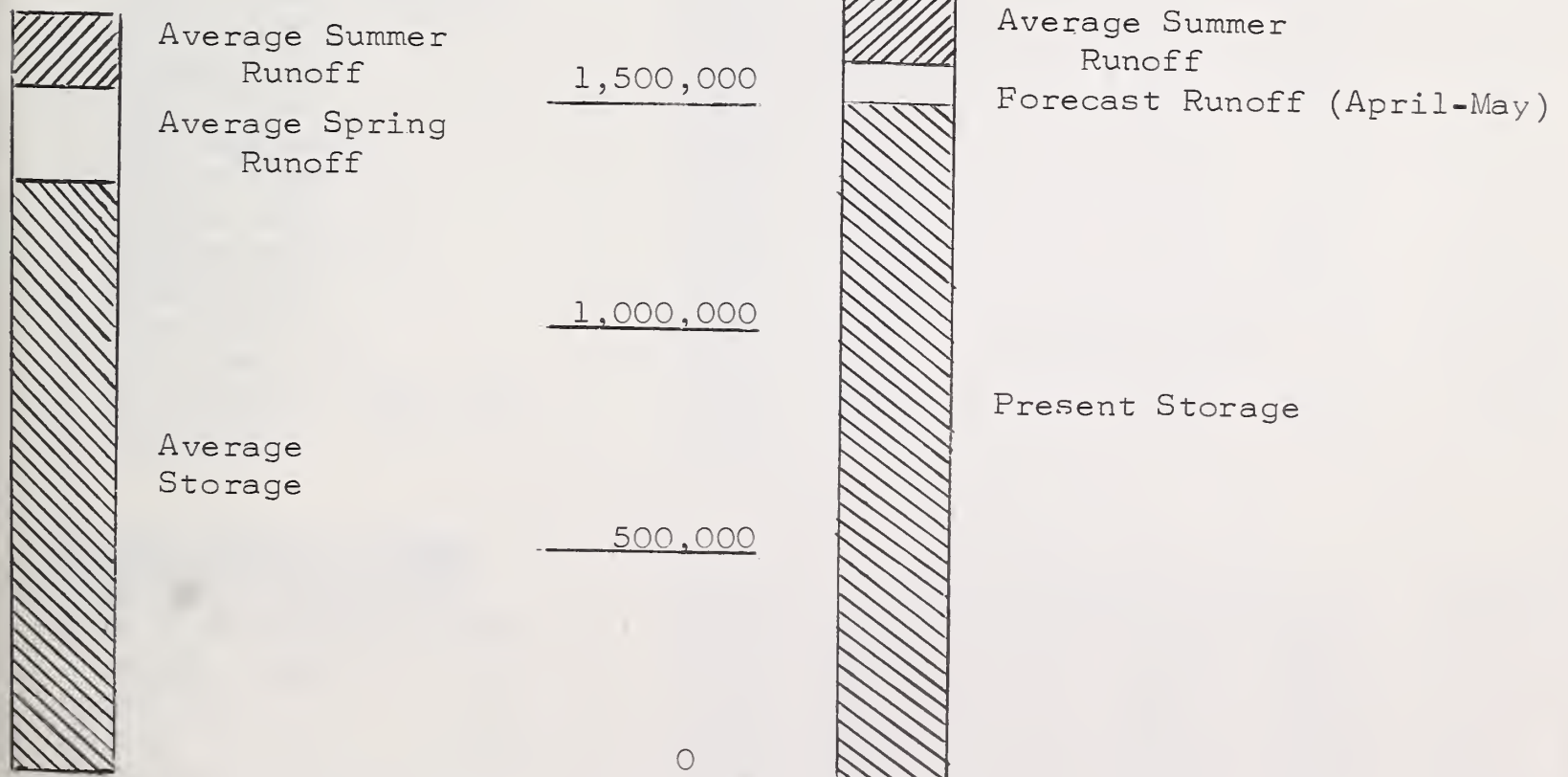
3,000,000

AVERAGE SUPPLY
ON APRIL 1

2,500,000

ANTICIPATED 1974 SUPPLY

2,000,000



Based on Present Storage + Forecast Spring Runoff + Average Summer Runoff



SNOW ABOUT APRIL 1, 1974

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
<u>GILA RIVER</u>						
Bear Wallow	8100	4/1	0	0.0	12.0	2.9
Beaver Head	8000	3/28	0	0.0	6.8	1.7
Coronado Trail	8000	3/29	0	0.0	9.0	0.7
Emory Pass #1 *	7800	3/28	0	.0	0.1	0.0**
Emory Pass #2 *	7800	3/28	0	0.0	2.5	0.0**
Frisco Divide	8000	3/29	0	0.0	6.8	0.6
Hannagan Meadows *	9090	3/28	13	4.4	21.8	8.0**
Hummingbird (A)	10550	3/31	18	6.9	29.7	15.1**
McKnight Cabin * (A)	9300	3/31	0	0.0	8.9	2.4**
Mogollon	7000	3/31	0	0.0	0.0	0.0
Nutriso	8500	3/28	0	0.0	4.9	0.5
Redstone Trail	8600	3/31	2	0.7	15.1	7.0**
Rose Canyon	7300	4/1	0	0.0	7.6	0.5
Silver Creek Divide	9000	3/31	9	2.8	20.0	11.5**
State Line	8000	3/29	0	0.0	8.3	0.6
Whitewater (A)	10750	3/31	41	14.2	34.4	20.2**
<u>VERDE RIVER</u>						
Baker Butte	7300	3/30	0	0.0	23.9	3.5**
Baker Butte #2	7700	3/30	22	9.0	30.8	---
Camp Wood	5700	4/1	0	0.0	0.4	0.1
Chalender *	7100	4/1	0	0.0	12.0	1.0
Copper Basin Divide	6720	4/1	0	0.0	10.8	0.0**
Fort Valley	7350	4/1	0	0.0	10.8	1.1
Gaddes Canyon	7600	3/29	3	1.2	20.8	3.6
Happy Jack	7630	4/1	0	0.0	20.1	1.4
Iron Springs *	6200	4/1	0	0.0	2.3	0.1
Mingus Mountain	7100	3/29	0	0.0	6.4	0.1
Mormon Lake *	7350	3/30	0	0.0	19.5	1.7
Mormon Mountain	7500	3/30	0	0.0	24.1	3.0
Newman Park	6750	3/30	0	0.0	14.4	0.6**
Snow Bowl #1	10260	4/1	18 $\frac{1}{2}$	7.0 $\frac{1}{2}$	---	10.3**
Snow Bowl #2	11000	4/1	36 $\frac{1}{2}$	13.0 $\frac{1}{2}$	---	19.5**
White Horse Lake Jct.	7150	4/1	0	0.0	16.6	1.2**
White Spar	6000	4/1	0	0.0	2.9	0.0**
<u>LOWER COLORADO RIVER</u>						
Bill Williams Int.	8550	NO SURVEY			---	6.3**
Bill Williams Summit	8950	4/1	30 $\frac{1}{2}$	10.5 $\frac{1}{2}$	31.7	9.3**
Bright Angel	8400	3/31	6	1.8	23.6	---
Chalender *	7100	4/1	0	0.0	12.0	1.0
Fort Valley	7350	4/1	0	0.0	10.8	1.1
Grand Canyon	7500	4/1	0	0.0	10.6	0.6
Williams Ski Run	7720	4/1	12	5.0	23.0	5.8**

† 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72 Adjusted average. (A) Aerial observation; water content estimated.
 $\frac{1}{2}$ Estimated



SNOW

ABOUT APRIL 1, 1974

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
SALT RIVER						
Baldy *	9125	4/1	5	1.6	16.6	6.2
Beaver Head	8000	3/28	0	0.0	6.8	1.7
Canyon Creek	7500	3/27	0	0.0	15.0	1.3
Canyon Point	7600	3/27	0	0.0	17.4	1.2**
Coronado Trail	8000	3/29	0	0.0	9.0	0.7
Forest Dale	6430	4/1	0	0.0	3.1	0.0
Ft. Apache	9160	4/1	9	3.0	16.3	6.3
Hannagan Meadows	9090	3/28	13	4.4	21.8	8.0**
Hawley Lake	8300	4/1	0	0.0	18.8	3.6**
Heber	7600	3/27	0	0.0	16.2	1.5
Maverick Fork	9050	4/1	9	3.0	20.4	7.5
McNary	7200	4/1	0	0.0	11.6	0.4
Milk Ranch	7000	4/1	0	0.0	8.0	0.1
Mt. Ord (A)	11000	3/25	75	25.0	40.5	26.4**
Nutriosos *	8500	3/29	0	0.0	4.9	0.5
Smith Cienega (A)	9850	3/24	60	21.1	36.8	19.8**
Sunrise Summit	10600	3/29	45 <u>1/</u>	16.0 <u>1/</u>	26.8	---
Wilson Lake	9000	3/29	17 <u>1/</u>	6.0 <u>1/</u>	21.6	9.0**
Workman Creek	6900	3/29	0	0.0	19.2	2.8
Promontory Butte	7930	3/27	24	10.0	29.5	---
Baldy #2	9750	3/26	42	18.6	33.2	16.9
Baldy #3	10950	3/26	66	24.6	47.1	25.3
LITTLE COLORADO RIVER						
Baldy	9125	4/1	5	1.6	16.6	6.2
Canyon Creek	7500	3/27	0	0.0	15.0	1.3
Canyon Point	7600	3/27	0	0.0	17.4	1.2**
Cheese Springs	8600	3/29	6 <u>1/</u>	2.0 <u>1/</u>	12.4	7.4**
Forest Dale	6430	4/1	0	0.0	3.1	0.0
Ft. Apache	9160	4/1	9	3.0	16.3	6.3
Fort Valley	7350	4/1	0	0.0	10.8	1.1
Happy Jack *	7630	4/1	0	0.0	20.1	1.4
Heber	7600	3/27	0	0.0	16.2	1.5
Inner Basin #1	10100	3/29	31	11.9	43.9	17.3**
Inner Basin #2	9750	3/29	17	6.0	31.2	10.2**
McNary	7200	4/1	0	0.0	11.6	0.4
Mormon Lake	7350	3/30	0	0.0	19.5	1.7
Mormon Mountain	7500	3/30	0	0.0	24.1	3.0
Nutriosos	8500	3/29	0	0.0	4.9	0.5
Snow Bowl #1	10260	4/1	18 <u>1/</u>	7.0 <u>1/</u>	---	10.3**
Snow Bowl #2	11000	4/1	36 <u>1/</u>	13.0 <u>1/</u>	---	19.5**
Wilson Lake	9000	3/29	17 <u>1/</u>	6.0 <u>1/</u>	21.6	9.0**
Baldy #2	9750	3/26	42	18.6	33.2	16.9
Baldy #3	10950	3/26	66	24.6	47.1	25.3

† 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72 Adjusted average. (A) Aerial observation; water content estimated.

1/ Estimate

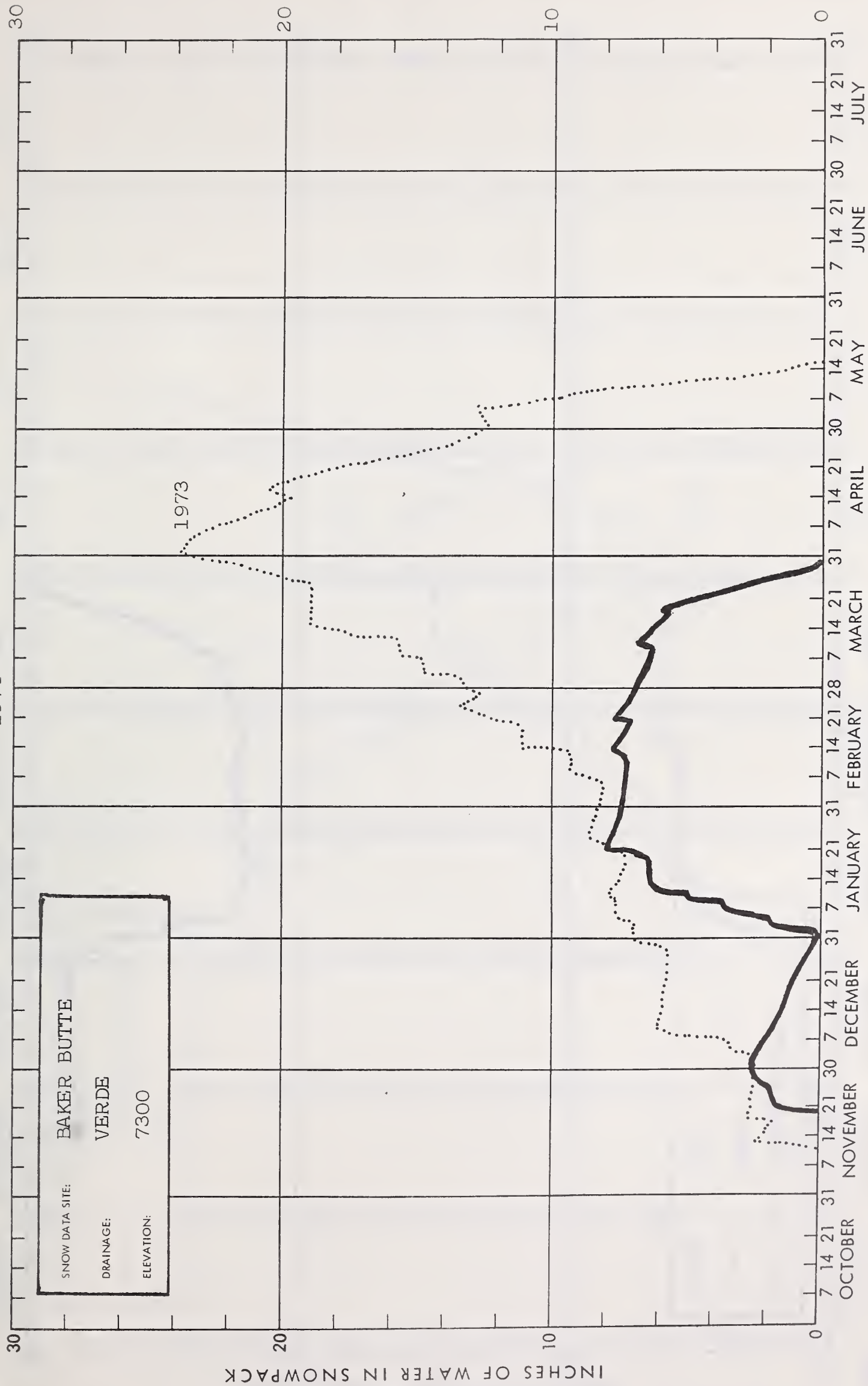
SNOW 1974 ADDITIONS & CORRECTIONS

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
Bright Angel	8400	3/15	25	8.7	NO AVERAGE	
Agassiz	11200	12/27 1973	24	5.2		
Agassiz	11200	1/30	60	15.2		
"	"	3/1	54	16.0		
"	"	3/29	48	18.0		
Hummingbird (A)	10550	1/15	30	9.0		
"	"	1/31	25	9.4		
"	"	2/14	21	9.2		
"	"	2/28	20	10.0		
Promontory Butte	7930	2/13	35	12.2		
"	"	3/1	36	12.9		
"	"	3/11	42	13.8		

SNOW PILLOW DATA

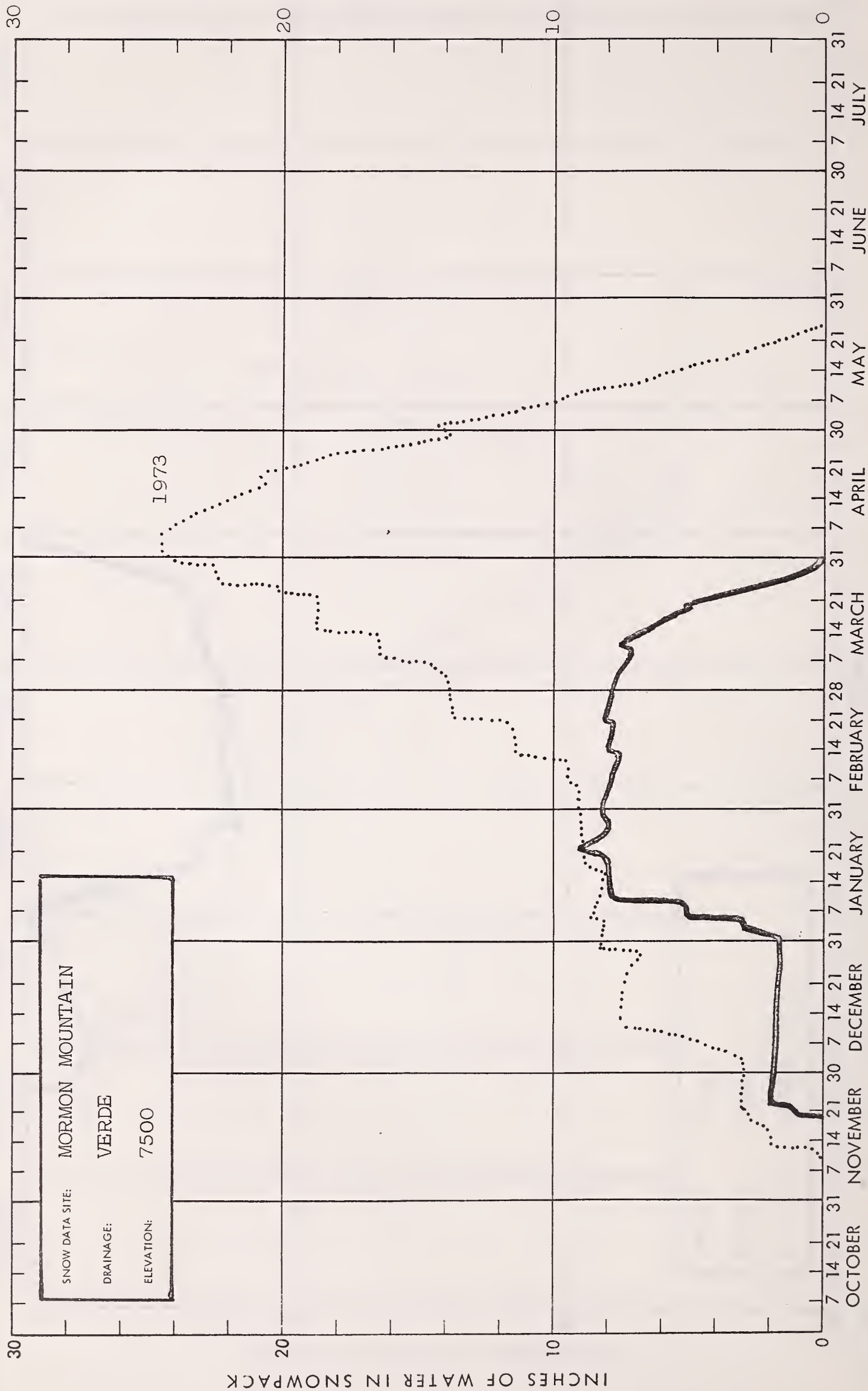
1974

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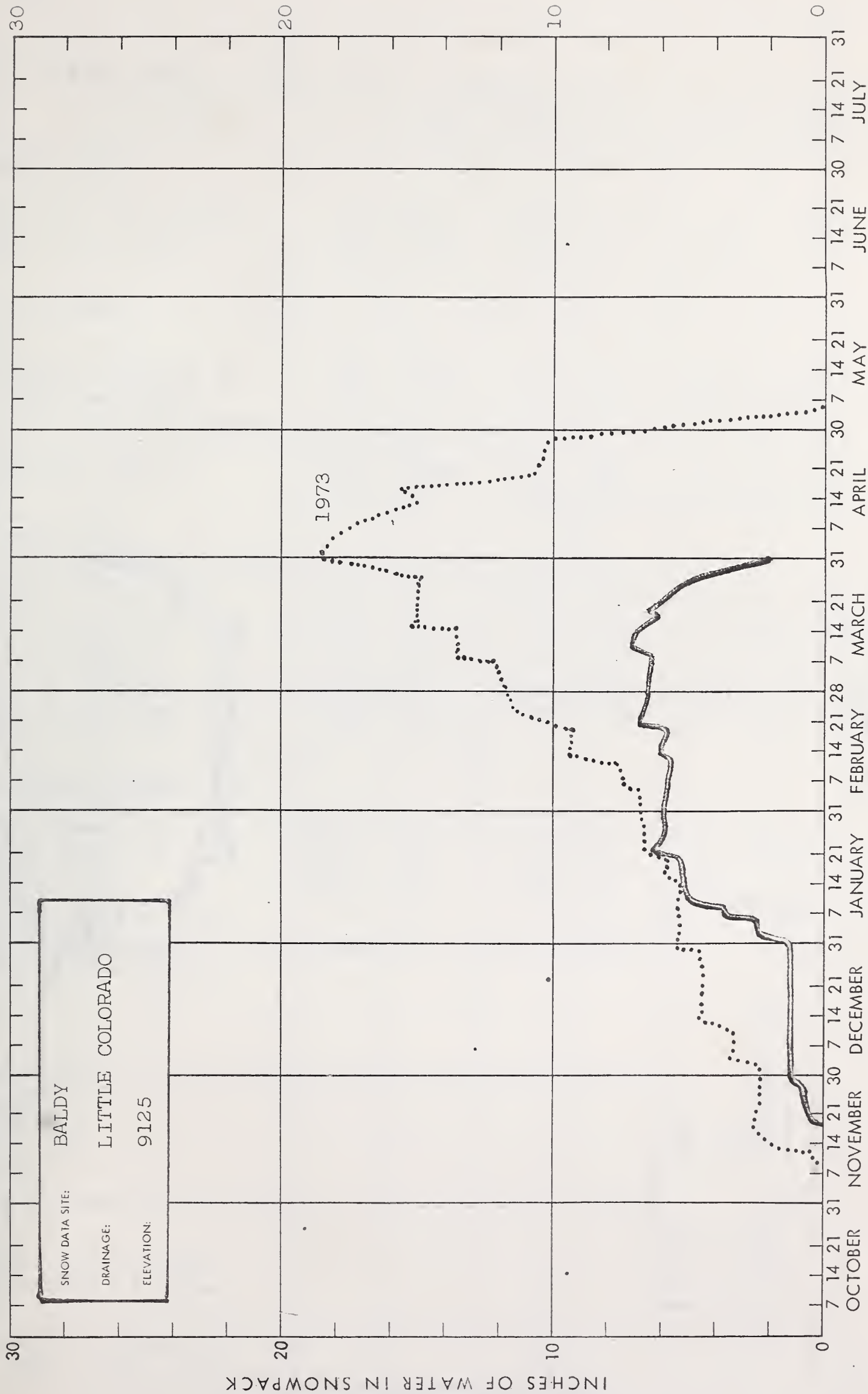
SNOW DATA SITE: BAKER BUTTE
DRAINAGE: VERDE
ELEVATION: 7300

SNOW PILLOW DATA 1974



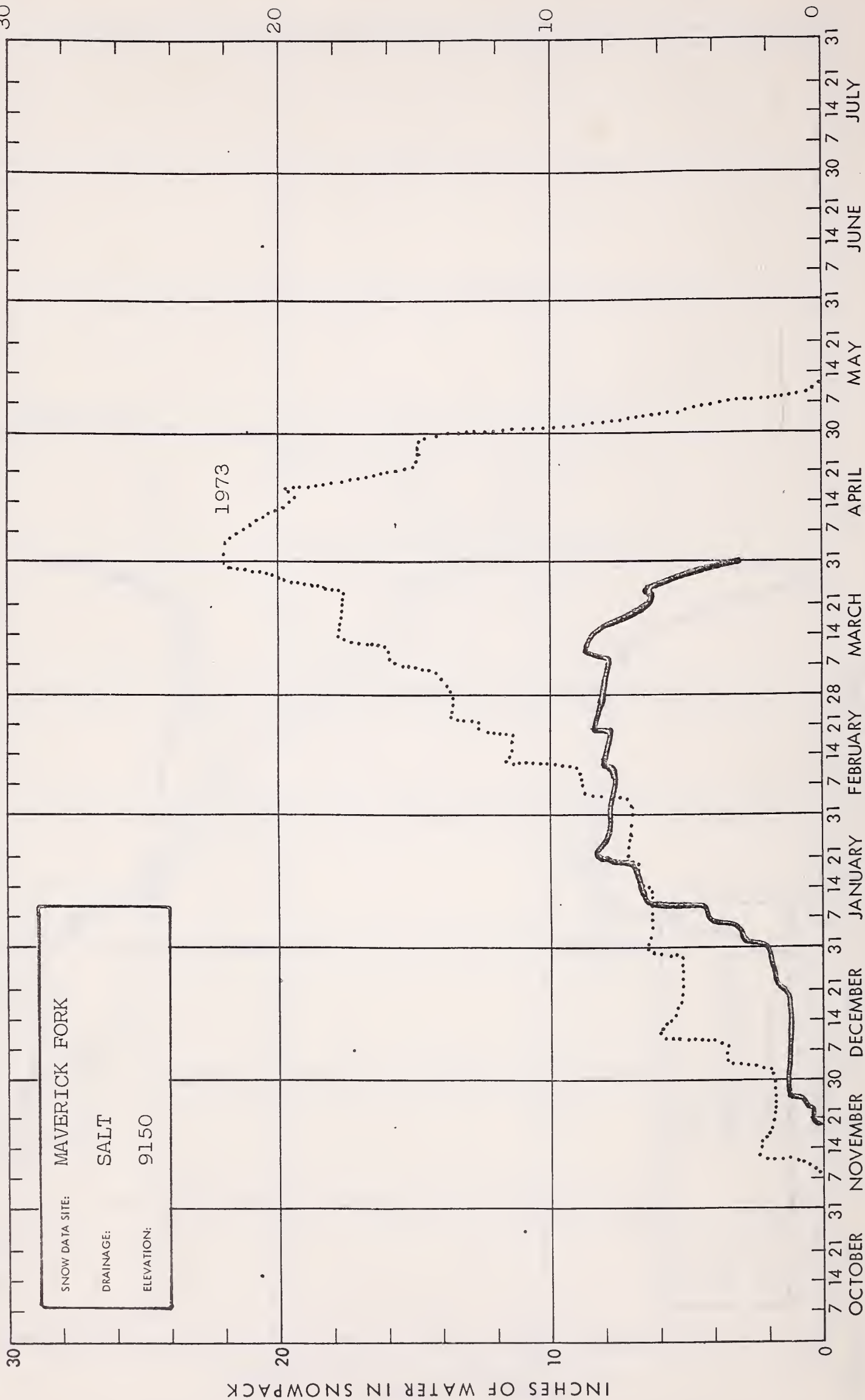
SNOW PILLOW DATA 1974

WSFB-X138



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SNOW PILLOW DATA 1974



PRECIPITATION (Inches) ABOUT APRIL 1, 1974

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION			FROM APPROX. NOV. 1 TO DATE		
		Date of Reading	Month's Precipitation	Average †	This Year	Average †	Percent of Average
<u>GILA RIVER</u>							
Silver Creek Divide	9000	3/31	2.60	2.41*	9.08	14.23*	64
Hannagan Meadows **	9030	3/28	2.80	2.21	10.26	12.80	80
Frisco Divide **	8000	3/29	1.40	---	5.53	---	--
<u>SALT RIVER</u>							
Canyon Point	7600	3/27	2.21	3.67*	15.93	17.17*	93
Hannagan Meadows **	9030	3/28	2.80	2.21	10.26	12.80	80
Little Wildcat (Heber Snow Course)	7600	3/27	2.05	2.96	13.17	14.46	91
Maverick Fork	9050	4/1	2.00	2.24	11.81	12.26	96
Workman Creek **	6970	3/29	3.64	3.00	14.31	17.28	83
Wilson Lake	9100	4/1	2.12	2.50*	10.72	12.99*	83
<u>VERDE RIVER</u>							
Baker Butte	7300	3/30	2.09	3.37*	14.23	17.32*	82
Copper Basin Divide	6720	4/1	2.35	2.43*	9.59	11.52*	83
Fort Valley **	7350	4/1	.77	2.06	6.10	9.08	67
Happy Jack **	7480	4/1	1.34	2.27	9.27	11.37	82
Mingus Mountain	7660	3/29	2.05	2.13	8.95	9.99	90
Mormon Mountain	7500	4/30	1.89	3.03*	13.02	16.17*	81
White Horse Lake Jct.**	7150	DELAYED		---		---	
<u>LITTLE COLORADO</u>							
Inner Basin #1	9830	3/29	1.55	3.01	11.70	15.84	74
Inner Basin #2	10050	3/29	2.40	3.49*	16.55	18.16*	91
Greer Lakes	8500	4/1	.80	1.15	4.32	7.13	61
Little Wildcat (Heber Snow Course)	7600	3/27	2.05	2.96	13.17	14.46	91
Sheep Crossing (Baldy Snow Course)	9125	4/1	2.40	2.23	11.52	11.90	96
1958-72 Average Adjusted Average							
** Data Supplied by U.S. Forest Service							

† 1958-72 Average
* Adjusted Average

** Data Supplied by
U.S. Forest Service



SOIL MOISTURE ABOUT APRIL 1, 1974

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †
<u>GILA RIVER</u>							
Frisco Divide	8000	48	13.3	3/29	8.2	14.2	11.6
<u>SALT RIVER</u>							
Black River Divide	9100	48	16.8	4/1	15.8	18.4	16.9
Canyon Creek	7500	48	18.3	3/27	17.9	18.7	16.1
Corduroy Creek	6000	36	13.5	3/27	9.0	14.9	10.4
McNary	7200	48	16.3	3/27	14.0	17.9	16.1
<u>VERDE RIVER</u>							
Mormon Mountain	7500	48	16.1	3/30	17.8	17.8	16.9
Newman Park	6750	48	17.7	4/1	18.7	19.5	19.4
† 1958-72 15-year average							

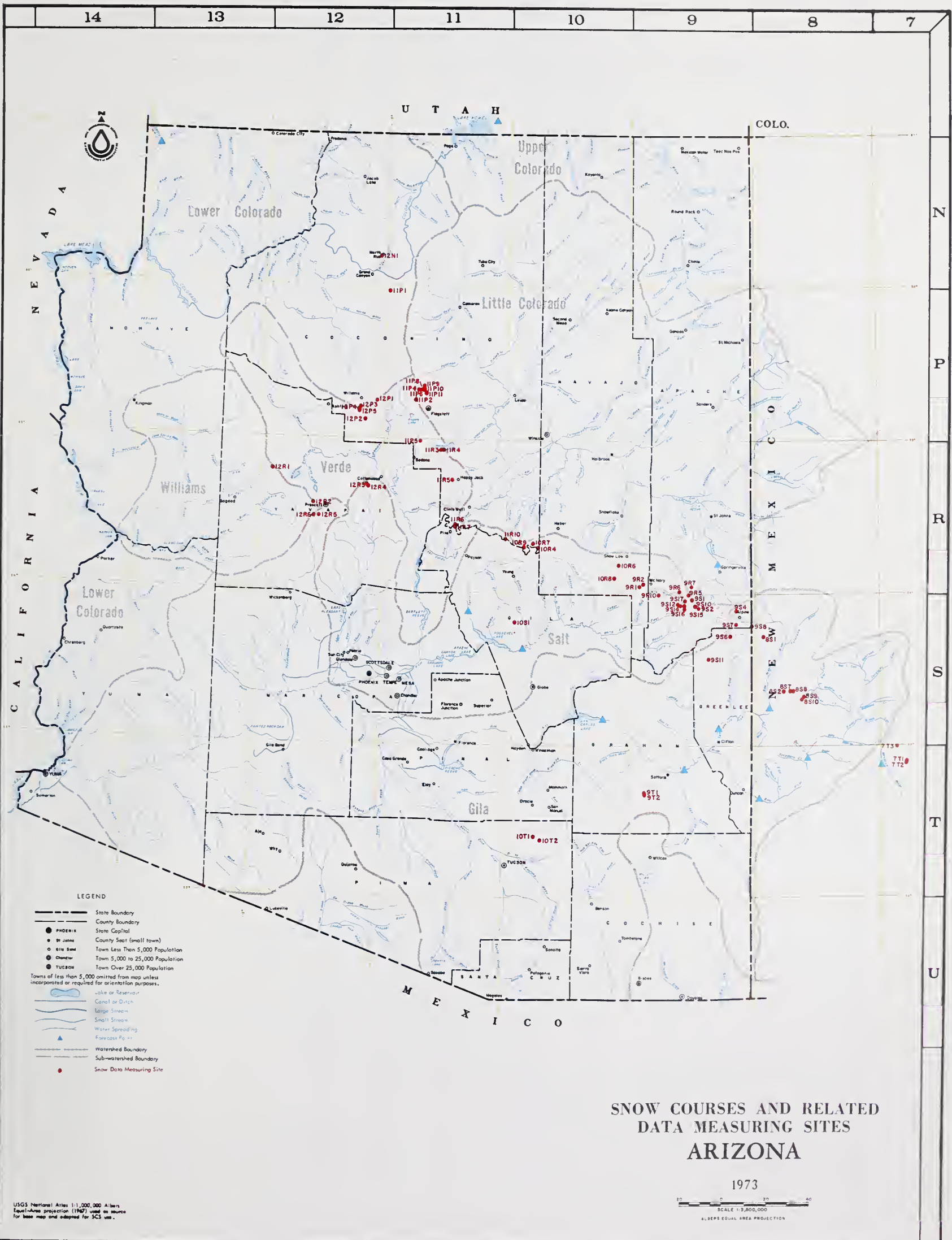


SNOW COURSE

SNOW SURVEYOR

Baker Butte #1 & #2	SCS - Dick Enz
Baldy	SCS - Aubrey Stanton & Gerry Raynor
Bear Wallow	Coronado N.F. - Bonde Eulberg
Beaver Head	Apache N.F. - Servis, Gutierrez and Monday
Bill Williams Intermediate	Kaibab N.F. - Garcia
Bill Williams Summit	Kaibab N.F. - Garcia
Bright Angel	National Park Service - Jim Burrows
Camp Wood	Prescott N.F. - Ron Melcher
Canyon Creek	SCS - Dick Enz
Canyon Point	SCS - Dick Enz
Chalender	Kaibab N.F. - Martin Freshour
Cheese Springs	SCS - Aubrey Stanton and Gerry Raynor
Copper Basin Divide	SCS - William Gray
Coronado Trail	Apache N.F. - J. Wilson
Emory Pass #1 and #2	SCS - Anderson and Garcia
Forest Dale	Bureau of Indian Affairs - Endfield & Grippen
Ft. Apache	SCS - Aubrey Stanton and Gerry Raynor
Fort Valley	Rocky Mtn. Forest & Range Experiment Station
Frisco Divide	Apache N.F. - J. L. Lockwood
Gaddes Canyon	Earl Barto
Grand Canyon	National Park Service - Valder
Hannagan Meadows	Apache N.F. - Servis, Gutierrez and Monday
Happy Jack	Coconino N.F. - Warren Harris
Hawley Lake	Bureau of Indian Affairs - Endfield & Grippen
Heber	SCS - Dick Enz
Hummingbird	Ray Freeman
Inner Basin #1 & #2	SCS (Jorgensen) and City of Flagstaff (Benjamin)
Iron Springs	SCS - William Gray
Maverick Fork	SCS - Aubrey Stanton and Gerry Raynor
McKnight Cabin	Ray Freeman
McNary	Bureau of Indian Affairs - Endfield & Grippen
Milk Ranch	Bureau of Indian Affairs - Endfield & Grippen
Mingus Mountain	Earl Barto
Mogollon	James Lyon
Mormon Lake	SCS - Jack Jorgensen and Don Taylor
Mormon Mountain	SCS - Jack Jorgensen and Don Taylor
Mt. Ord	Salt River Project - Bill Warskow
Newman Park	SCS - Jack Jorgensen and Don Taylor
Nutrioso	Apache N.F. - J. Wilson
Redstone Trail	James Lyon
Rose Canyon	Coronado N.F. - Bonde Eulberg
Silver Creek Divide	James Lyon
Smith Cienega	Salt River Project - Bill Warskow
Snow Bowl #1 & #2	Coconino N.F. - Jim Bedlion
State Line	Apache N.F. - J. L. Lockwood
Sunrise Summit	SCS - Aubrey Stanton
White Horse Lake Junction	Kaibab N.F. - Garcia
White Spar	SCS - William Gray
Whitewater	Ray Freeman
Williams Ski Run	Kaibab N.F. - Garcia
Wilson Lake	SCS - Aubrey Stanton and Gerry Raynor
Workman Creek	Rocky Mtn. Forest & Range Experiment Station





INDEX to SNOW COURSES and SOIL MOISTURE STATIONS

NUMBER	NAME	SEC.	TWP.	RGE.	ELEV.	DRAINAGE	OBSERVER	RECORD BEGAN
11P10A	Agassiz	32	23N	7E	11200	Little Colorado	SCS-C.F.*	1968
11R7	Baker Butte #2	9	12N	9E	7700	Verde	SCS	1971
11R6PSP	Baker Butte	4	12N	9E	7300	Verde	SCS	1966
9S1APSP	Baldy	28	7N	27E	9125	Little Colorado	SCS	1950
9S15	Baldy #2	12	6N	26E	9750	Little Colorado	SCS	1963
9S16	Baldy #3	13	6N	26E	10950	Little Colorado	SCS	1963
10T1	Bear Wallow	6	12S	16E	8100	Gila	FS	1948
9S6	Beaver Head	13	4N	30E	8000	San Francisco	FS	1938
12P5	Bill Williams Intermediate	17	21N	2E	8550	Cataract	FS	1967
12P4	Bill Williams Summit	17	21N	2E	8950	Verde	FS	1967
9S10m	Black River Divide	10	6N	27E	9400	Salt	SCS	1954
12N1	Bright Angel	34	33N	3E	8400	Bright Angel Creek	NPS	1947
12R1	Camp Wood	3	16N	6W	5700	Verde	FS	1946
10R7M	Canyon Creek #2	18	11N	15E	7500	Little Colorado	SCS	1958
10R9P	Canyon Point	28	11N	14E	7600	Salt	SCS	1967
12P1M	Chalender	27	22N	3E	7100	Verde	FS	1947
9R7	Cheese Springs	28	8N	27E	8600	Little Colorado	SCS	1969
12R6P	Copper Basin Divide	23	13N	3W	6720	Verde	SCS	1963
10R8m	Corduroy Creek	4	8N	21E	6000	Salt	SCS	1954
9S7	Coronado Trail	26	5N	30E	8000	San Francisco	FS	1938
9T2A	Crazy Horse	34	8S	24E	10200	Gila	FS	1963
11P11a	Doyle Saddle	4	22N	7E	10900	Little Colorado	SCS	1968
7T1	Emory Pass #1	16	16S	9W**	7800	Mimbres	SCS	1967
7T2	Emory Pass #2	16	16S	9W**	7800	Mimbres	SCS	1967
10R6	Forest Dale	2	9N	21E	6430	Salt	BIA	1939
9R5	Ft. Apache	18	7N	27E	9160	Little Colorado	SCS	1951
11P2P	Ft. Valley	22	22N	6E	7350	Little Colorado	FS	1947
8S1MP	Frisco Divide	31	6S	20W**	8000	San Francisco	FS	1938
12R4	Gaddes Canyon	11	15N	2E	7600	Verde	SCS	1954
11P1	Grand Canyon	21	30N	4E	7500	Hance Creek	NPS	1947
9S11P	Hannagan Meadows	19	3N	29E	9090	San Francisco	FS	1964
11R5P	Happy Jack	30	16N	9E	7630	Verde	FS	1951
9R10	Hawley Lake	13	7N	24E	8300	Salt	BIA	1966
10R4PSP	Heber	28	11N	15E	7600	Little Colorado	SCS	1950
9T1A	High Peak	34	8S	24E	10500	Gila	FS	1963
8S9A	Hummingbird	19	11S	17W**	10550	Gila	SCS	1964
11P9P	Inner Basin #1	28	23N	7E	10000	Little Colorado	C.F.*	1967
11P8P	Inner Basin #2	28	23N	7E	9750	Little Colorado	C.F.*	1967
12R2	Iron Springs	22	14N	3W	6200	Bill Williams	SCS	1946
9S2APSP	Maverick Fork	13	6N	27E	9150	Salt	SCS	1950
7S3A	McKnight Cabin	10	15S	10W**	9300	Mimbres	SCS	1967
9R2M	McNary	23	8N	23E	7200	Salt	BIA	1939
9R1	Milk Ranch	33	8N	23E	7000	Salt	BIA	1941
12R3	Mingus Mountain	3	15N	2E	7100	Verde	SCS	1947
8S2	Mogollon	2	11S	19W**	7000	San Francisco	SCS	1953
11R4	Mormon Lake	13	18N	8E	7350	Little Colorado	SCS	1947
11R3MAPSP	Mormon Mountain	14	18N	8E	7500	Verde	SCS	1950
9S12A	Mt. Ord	4	6N	26E	11200	Salt	SRP-SCS	1966
11P5M	Newman Park	25	19N	6E	6750	Verde	SCS	1963
9S4	Nutrioso	23	6N	30E	8500	San Francisco	FS	1938
11R10	Promontory Butte	5	11N	13E	7930	Little Colorado	SCS	1973
8S7	Redstone Trail	5	11S	18W**	8600	San Francisco	SCS	1961
10T2	Rose Canyon	15	12S	16E	7300	Gila	FS	1948
8S8P	Silver Creek Divide	4	11S	18W**	9000	San Francisco	SCS	1964
9S14A	Smith Cienega	10	6N	26E	10050	Salt	SRP-SCS	1966
11P4	Snow Bowl #1	36	23N	6E	10260	Verde	FS	1961
11P6	Snow Bowl #2	31	23N	7E	11000	Verde	FS	1965
9S8	State Line	6	6S	21W**	8000	San Francisco	FS	1938
9S17	Sunrise Summit	36	7N	26E	10600	Salt	SCS	1972
12P2P	White Horse Lake Jct.	2	20N	2E	7180	Verde	FS	1967
12R5	White Spar	19	13N	2W	6000	Verde	SCS	1963
8S10A	Whitewater	19	11S	17W**	10750	Gila	SCS	1964
12P3	Williams Ski Run	9	21N	2E	7720	Cataract	FS	1967
9R6P	Wilson Lake	4	7N	26E	9000	Salt	SCS	1966
10S1P	Workman Creek	33	6N	14E	6900	Salt	FS	1952

A Aerial Snow Depth Marker
a Aerial Snow Depth Marker Only

M Soil Moisture Station
m Soil Moisture Station Only

P Precipitation Storage Gage
SP Snow Pressure Pillow.

** NM Principal Meridian
* City of Flagstaff

The Following Organizations Cooperate in the Arizona Snow Survey Work

FEDERAL

- Department of Agriculture
 - Soil Conservation Service
 - Forest Service
 - Apache Forest
 - Coconino Forest
 - Coronado Forest
 - Gila Forest
 - Kaibab Forest
 - Prescott Forest
 - Rocky Mountain Forest and Range Experiment Station
 - Tonto Forest
- Department of Commerce
 - NOAA, National Weather Service
- Department of Interior
 - Bureau of Reclamation
 - Region 111
 - Geological Survey
 - Arizona District
 - New Mexico District
 - Bureau of Indian Affairs
 - Fort Apache Reservation
 - San Carlos Irrigation Project
 - National Park Service
 - Grand Canyon National Park
- Gila Water Commissioner
 - Safford, Arizona

STATE

- Arizona Game and Fish Department
- Arizona State Parks Board
- Arizona Water Commission
- University of Arizona
 - Arizona Agricultural Experiment Station
 - Water Resource Research Center
 - Department of Watershed Management

MUNICIPAL

- City of Flagstaff

IRRIGATION PROJECTS

- Salt River Valley Water User's Association
 - Phoenix, Arizona
- San Carlos Irrigation and Drainage District
 - Coolidge, Arizona
- Maricopa County Municipal Water Conservation District

PRIVATE

- Southwest Forest Industries, Inc.
 - McNary, Arizona
- Fort Apache Indian Reservation
 - White Mountain Recreation Enterprises

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

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